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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/064,500 | 07/22/2002 | Martin B. Barnatz | 06618/891001 / CIT 2969 C | 4858 |

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EXAMINER

VAN, QUANG T

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3742

DATE MAILED: 08/22/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/064,500

Applicant(s)

BARMATZ ET AL.

Examiner

Quang T Van

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

Art Unit: 3742

Claim Objections

1. Claims 4 and 5 are objected to because of the following informalities: claims should be separated by paragraphs; therefore, claims 4 and 5 should be separated to each other by paragraphs (also noted in claims 9 and 10). Correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, "said substrate" recited in line 1 is indefinite because it is unclear which one "said substrate" is referred back to; since the previous claim 1 discloses the first and second substrates. Clarification is requested.

In claim 12, "said material of said substrate is semiconductor" recited in lines 1-2 is indefinite because it is unclear which one "said substrate" is referred back to; since the previous claim 21 discloses the first and second substrates. Clarification is requested.

NOTE: for purpose of examination, it is presumed "said substrate" is "the first substrate".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3742

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-11, 13-17, and 21-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Baleras et al (US 6,531,232). Baleras discloses a system for assembling substrates to bonding zones provided with cavities comprising the step placing a first substrate (100) with a first surface part (104) that has better microwave absorption than said first substrate (100), against a second substrate (300) with a second surface part (312a, 312b) that has better microwave absorption than said second substrate (300); figures 2, 8 and 9 show the step of aligning said first surface part (104) with said second surface part (312a, 312b); and applying microwave energy to the first and second parts to bond the first substrate to the second substrate (col.4, lines 40-41).

6. Claims 1-2, 5-9, 11, 13-14, 16-17, 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Clavenger et al (US 6,337,513). Clavenger discloses a chip packaging system comprising the step placing a first substrate (20) with a first surface part (22) that has better microwave absorption than said first substrate (20), against a second substrate (23) with a second surface part (24) that has better microwave absorption than said second substrate (23); figure 2a-d show the step of aligning said first surface part (22) with said second surface part (24); and applying microwave energy to the first and second parts to bond the first substrate to the second substrate (col. 3, lines 51-59 and col. 4, lines 20-24).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 12, 28, 30-33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baleras et al (US 6,531,232). Baleras discloses substantially all features of the claimed invention including the third material being insulated material which is poor absorber of microwave. Baleras does not disclose the third material is semiconductor material. It would have been obvious to one having ordinary skill in the art the third material is semiconductor material. Since semiconductor material is also a material of poor absorber of microwave.

9. Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baleras et al (US 6,531,232) in view of Kub et al (US 6,607,969). Baleras discloses substantially all features of the claimed invention except said one and other substrates are held together by an additional weight. Kub discloses one and other substrates are held together by an additional weight (11, figure 2a). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Baleras one and other substrates are held together by an additional weight as taught by Kub in order to improve bonding between substrates.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baleras et al (US 6,531,232) in view of Estes et al. (US 6,410,415). Baleras discloses

Art Unit: 3742

substantially all features of the claimed invention except said second and fourth materials are gold. Estes discloses second and fourth materials are gold (col. 3, lines 55-58). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Baleras second and fourth materials are gold as taught by Estes in order to have a good conductivity and also preventing from oxidation.

11. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baleras et al (US 6,531,232) in view of Barmatz et al (US 6,054,693). Baleras discloses substantially all features of the claimed invention except the step of applying microwave in a cylindrical cavity which is excited by a microwave source at the resonant frequency of a TM 010 mode. Barmatz discloses the step of applying microwave in a cylindrical cavity which is excited by a microwave source at the resonant frequency of a TM 010 mode (col. 6, lines 22-25). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Baleras the step of applying microwave in a cylindrical cavity which is excited by a microwave source at the resonant frequency of a TM 010 mode as taught by Barmatz in order to provide high frequency wave to the bonding substrates.

12. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baleras et al (US 6,531,232) in view of Mino et al (US 6,485,785). Baleras discloses substantially all features of the claimed invention except the step of placing a plurality of samples on a conveyor, and taking said samples into an area of microwave fields. Mino discloses the step of placing a plurality of samples (4) on a conveyor (3), and taking said samples (4) into an area of microwave fields (col. 13, lines 44-47). It would have

Art Unit: 3742

been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Baleras the step of placing a plurality of samples on a conveyor, and taking said samples into an area of microwave fields as taught by Mino in order to provide an automatic transport through the chamber.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T Van whose telephone number is 703-306-9162. The examiner can normally be reached on 8:00Am 7:00Pm M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sang Paik can be reached on 703-308-1147. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.



QV
August 20, 2003



Quang T Van
Primary Examiner
Art Unit 3742